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INSERVICE TRAINING FOR VOCATIONAL TEACHERS IN UTAH. FINAL REPORT.

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THE SPECIFIC OBJECTIVES OF THIS INVESTIGATION WERE TO DETERMINE THE EXTENT OF UTAH'S INSERVICE TRAINING PROGRAM, COMPARE IT WITH THAT OF OTHER STATES, DETERMINE ITS EFFECTIVENESS, AND ASCERTAIN PROBLEM AREAS AND MAKE RECOMMENDATIONS FOR IMPROVEMENT. DATA WERE COLLECTED BY A SURVEY OF OTHER STATE PROGRAMS, PERSONAL INTERVIEWS WITH STATE VOCATIONAL SPECIALISTS, AND A SURVEY OF STATE VOCATIONAL TEACHERS. THE CONCLUSIONS WERE--(1) A SYSTEMATIC METHOD OF SCHEDULING IS NEEDED TO COORDINATE THE ENTIRE INSERVICE TRAINING PROGRAM, (2) THE PRESENT PROGRAM SHOULD PLACE MORE EMPHASIS ON DOING RATHER THAN TELLING, (3) FINANCIAL ASSISTANCE SHOULD BE OFFERED TO TEACHERS TO ENCOURAGE PARTICIPATION, (4) WORK EXPERIENCE SHOULD BE ENCOURAGED, AND (5) MODERN TECHNIQUES SUCH AS MICRO-TEACHING SHOULD BE INCORPORATED INTO THE INSERVICE TRAINING PROGRAM. THE APPENDIXES CONTAIN INFORMATION ON UTILIZING A KEY-SORT CARD IN SCHEDULING INSERVICE COURSES AND UTILIZING MICRO-TEACHING IN INSERVICE EDUCATION, RESULTS OF A TRADES AND INDUSTRIES STUDY IN COLORADO CONCERNING INSERVICE EDUCATION, AND THE QUESTIONNAIRE AND TABULATION OF QUESTIONNAIRE RESULTS. (DM)

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FINAL REPORT

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INSERVICE TRAINING FOR VOCATIONAL TEACHERS IN UTAH

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SUMMARY

Inservice training is an integral part of an educational system. This report concerns inservice training for vocational and technical teachers in Utah.

Specific objectives of the study were:

1. To determine the extent of the inservice training program in Utah.
2. To compare the inservice training program in Utah with that of other states.
3. To determine the effectiveness of the inservice training program in Utah.
4. To ascertain problem areas and make recommendations for improvement.

The study was conducted as follows:

1. A survey of other state programs was made to provide baseline data for an assessment of Utah's program.
2. Personal interviews were held with state vocational specialists to determine the extent of the inservice training program in Utah and to ascertain problem areas.
3. Questionnaires were sent to vocational teachers throughout the state of Utah to gather statistical data concerning the inservice training program. Library materials were used to gain a depth of understanding.

Conclusions reached by the study included the following:

1. A systematic method of scheduling is needed to coordinate the entire inservice training program.
2. The present program should place more emphasis on doing rather than telling.
3. Financial assistance should be offered to the teachers to encourage participation.
4. Experience back in the field of work should be encouraged.
5. Modern techniques such as micro-teaching should be incorporated in the inservice training program.

I. INTRODUCTION

For a vocational and technical educational system to be effective, the teachers in that system must keep abreast of new developments and trends and must be able to effectively communicate with their students. An inservice training program should help teachers to stay current in their particular field and should help the teacher to communicate effectively with his students. It is the opinion of this writer that the responsibility of keeping abreast of modern developments and communications techniques should be apportioned between the individual teacher and his administrator in the educational system. Each teacher has a responsibility to use his initiative to upgrade his teaching effectiveness and ability, taking advantage of opportunities which are presented. It is the responsibility of the administrators to provide training opportunities for the teachers. Effective inservice training, then, would seem to be a balancing of these two factors.

A. Objectives of the Study

The primary purpose of this study was to evaluate the inservice teacher training program in vocational and technical education in Utah high schools.

Specific objectives were as follows:

1. To determine what inservice training is available to vocational and technical teachers in Utah;

2. To compare the inservice training program in Utah with that of other states;

3. To determine the effectiveness of the inservice training program in Utah as it applies to teachers of vocational and technical education, i.e. to ascertain whether the programs available meet the needs of vocational and technical teachers;

4. To ascertain problem areas in the present inservice training program;

5. To make recommendations for improvement of the inservice training program as measured by increased knowledge on the part of the teachers in their respective fields and increased ability to communicate with their students.

B. Limiting Factors

The findings resulting from this study were limited by the following factors:

1. Response from other states was not structured or uniform in scope or content, though much valuable information was obtained from this source.

2. The questionnaire, sent to teachers, vocational and technical, was not as well constructed as had been desired, being somewhat general.

3. The abstract nature of the problem being researched did not lend itself readily to objective evaluation.

4. The small size of the sample in each particular area or specialty, i.e. distributive education, home economics, agriculture, etc.

5. Absence of a uniform inservice training program for vocational and technical education which could be used as a standard in the evaluation of the program at the present time in Utah.

6. Inability to ascertain the effectiveness of the inservice training programs in operation in the individual school districts.

C. Definitions

1. Inservice training: Instruction which a teacher receives while engaged in the teaching profession which keeps the teacher informed of new trends and technological advances and seeks to improve teaching effectiveness.

2. Instructional Methods Course: A course taught which deals with improving effectiveness in communicating ideas and concepts to the student.

3. Vocational Teacher: A teacher who teaches a vocational class which meets the prescribed state criteria.

II. DESCRIPTION OF THE RESEARCH DESIGN

A. Design Format

In order to accomplish the purpose of this study, it was necessary to seek information from the following sources:

1. Survey of States to ascertain the type and extent of inservice training programs throughout the United States in order to provide a basis of comparison.

2. Personal Interviews to ascertain the state of the present inservice training program in Utah, to locate problem areas and to obtain suggestions and recommendations for improvement.

3. Questionnaires sent to individual vocational teachers to obtain information as to the needs of vocational teachers throughout the State, to solicit the personal evaluations and opinions of the teacher, to ascertain problem areas in the present program, and to solicit suggestions for improvement of the present programs.

4. Library Materials--to gain depth of understanding in the field and to obtain background information.

B. Population and Sample

The sample chosen for receipt of the questionnaire consisted of approximately 30% of the vocational teachers in the State of Utah. Each district vocational director also received a questionnaire.

Interviews were held with the State Specialists in distributive, vocational agriculture, home economics, trade and industrial, and business education.

Inquiries were sent to the Research Coordinating Units of the other states concerning the inservice training program in operation in their respective states.

III.. RESEARCH RESULTS

A. Personal Interviews

These interviews were conducted with the Utah State Vocational Specialists to ascertain the scope of the present inservice training program in each vocational specialty and to discover problem areas and solicit suggestions.

The specialists were aware of most of the areas where improvements were needed, as indicated by the teacher questionnaires, and were endeavoring to correct problem areas that they were aware of (discussed in detail under questionnaire results). These personal interviews proved to be an important part of the study, as they provided much valuable background information and a better understanding of the various problem areas. The questionnaire was based to a large degree on the information obtained from the specialists.

B. Survey of States - Review of Literature

It was felt that, in order to give the fullest opportunity for the various states to respond in a complete and comprehensive manner, a letter of inquiry should be framed in broad and general terms. Such a letter was sent to all State Research Coordinating Units and 42 responded. This letter was justified in that the responses gave an excellent overview of programs in the various states and provided valuable comments and suggestions.

It must be recognized, though, that the responses were not in any order or structure, and a comparison of Utah's inservice training program with that of the various states is extremely difficult to achieve and necessitated more subjectivity than had been desired. An analysis of the replies seemed to indicate that Utah would rank near the middle of a scale measuring the range and scope of inservice training programs. It was impossible to make a comparison of the quality of the programs of other states, but for the most part, the various other states used methods and approaches to inservice training similar to those in Utah. The need for program improvements was generally recognized, and inservice training was considered an important responsibility of the educational administrators. Most existing programs are of a "hit-and-miss" nature, and the lack of a coordinated and continuing activity was indicated as a major weakness.

Very few states reported any research in the area of inservice training; however, some very valuable suggestions were offered by those few.

A study in Colorado indicated that teachers were interested in upgrading their skills and would take advantage of opportunities when presented. (See Appendix A).

An important contribution involving scheduling came from New York. In order to overcome scheduling difficulties and adequately meet the scheduling and academic needs of teachers, a keysort system was used to determine these needs. The system was highly successful in numerous areas. Some of the significant improvements were: 1. Scheduling tasks were shortened. 2. Proper size classes were obtained. 3. Total student (teacher) training span was shortened from a four to six year span to one of 2.5 to 3.5 years. 4. Conflicts in schedules were avoided. 5. More students were able to be accommodated at times agreeable to them. 6. Course needs of teachers seeking to improve skills or obtain higher degrees could be ascertained. 7. Participant morale was improved. The system could be adapted to various areas and should prove highly effective in upgrading the inservice training program wherever used. Scheduling was an area that teachers in Utah felt should be improved, as determined by questionnaire, Appendix E. (See Appendix A for complete details for implementing the system).

The Hawaii RCU recently completed a project to determine the present educational background of vocational teachers in that state to use as supporting information to planning teacher inservice training. (The instrument used to compile their data is in Appendix B). Educational background is a consideration to planning and the Hawaii approach might be used in this area.

Several states are re-evaluating their present requirements to certify and recertify and are attempting to eliminate non-essential courses and make their programs more effective in meeting teachers' needs.

The Far West Laboratory for Educational Research and Development, Berkeley, California, is conducting a reasearch program in inservice education and discovered four specific defects in most of the inservice training programs studied: 1. The programs emphasize telling rather than doing. 2. The training dealt with general skills rather than specifics. 3. There is a lack of effective models; the teacher in an inservice training course is rarely told what to look for when improving skills, and is often working with a model (teacher used to exemplify skills) who is weak in essential skills. 4. No effective feedback was provided; in the practice of a skill, the learner can progress much more rapidly if he receives information on his performance.

An approach to inservice training was explored by the Far West Regional Laboratory, which uses mini-courses to offer several important advantages:

1. A complete self-contained program that can be used in a single school is provided. This is especially important for small, rural schools where few resources are available.

2. The teacher can try out new methods and ideas in a less difficult situation than that found in the regular classroom.

3. The four weaknesses, listed above, found in most teacher training programs, can be overcome using micro-teaching.

A complete outline of micro-teaching (mini-courses) is given in Appendix C .

Wisconsin has proposed a program for vocational teachers to provide them with practical experience back in the field of work. It was felt that providing the right type of work experience would enable a vocational teacher to be up-to-date with current industrial and business practices.

Research done in Pennsylvania indicated a number of ways to improve in-service education courses:

1. Plan more courses for summer months.

2. Schedule classes at close intervals.

3. Assign responsibility for course organization to a single individual.

4. Provide professional aids for the teacher and subject matter for his students.

5. Use qualified teachers of the specific subject as well as university educational specialists to teach inservice courses.

A comprehensive study of vocational-technical education in Utah was completed by the Division of Surveys and Field Services, George Peabody College for Teachers, published in 1966. The study dealt with inservice training to some extent and made recommendations in the various vocational areas as listed below:

1. Administrative: Sufficient staff must be provided to assure that both preservice and inservice training for teachers is available.

2. Vocational Agriculture: Inservice education needs and programs should be carefully planned and projected for a three or four year period.

3. Industrial Arts: A. Local boards of education should provide monetary incentive to encourage teachers to obtain fifth-year professional certificates. B. The state specialists in industrial arts and vocational agriculture should plan with teacher education institutions, programs of inservice education or summer workshops.

4. Home economics: Course offerings in the universities need to be extended to permit wider selection of courses by teachers working on fifth-year programs.

C. Questionnaire Returns

Questionnaires were sent to 200 vocational teachers throughout the state. The teachers who received the questionnaire were randomly selected from vocational distributive, agriculture, home economics, trade and industrial, and office education courses. Completed questionnaires were returned by 147 teachers, a sample population of approximately 30% of the vocational teachers in the state. Questionnaires were also sent to the 34 district vocational directors and returns were received from 20 (59%). The complete returns are included in this study as Appendix E.

The first substantive question delt with instructional methods. It was felt that courses in instructional methods should be a necessary part of any inservice training program. The results indicated that 44% of the respondent teachers had received a course in instructional methods within the past six months. Twenty-four percent had not received a course in instructional methods for over two years; and 9% had never received a course in instructional methods. Significantly, 21% of the trade and industrial teachers stated that they had never received a course in instructional methods. Answers received from the district vocational directors were not significantly different from the overall average of the teachers. A high percentage, (79%), of the teachers stated that there was opportunity to make suggestions for improving the inservice training program, but a significant variation was noted in business education where 44% of the teachers felt that there was not opportunity to make suggestions in program improvements.

Seventy-six percent of the teachers also agreed that the present inservice training program should emphasize more "doing". Again, a significant variation was shown among business teachers; 44% stated that the program stressed the "doing" aspect adequately. A number of comments indicated that the program was too idealistic rather than practical.

Eighty-nine percent of the respondents indicated that they would participate more frequently in the recertification courses and advanced degree programs if the courses were taught tuition-free or for reduced tuition. Teachers' comments indicated that the present tuition rates were too high and that college or recertification credit should be given for participation in more inservice training programs.

Teachers were asked for an opinion of the present inservice training program. Thirty percent stated that not enough inservice training was available; 20% stated that the program was too broad; 20% stated that the program met their needs adequately, while 20% stated that the program did not meet their needs adequately. Ten percent stated that there was not enough time to participate in inservice training.

The questionnaire also dealt with the scheduling of inservice training courses in an attempt to discover areas that might be improved. Ninety-five of the respondents indicated scheduling problems in one or more areas of the present inservice training program as described below. Travel distance to attend training courses was a major difficulty reported by the teachers; 26% stated that this was a problem. Twenty percent of the teachers stated that no courses were needed. Sixteen percent stated that there was a scheduling problem in that courses should be scheduled at a more convenient time of year (season). Comments indicated that summer months were preferable.

In order to obtain the most objective overall evaluation of the present methods used for inservice training programs, all of the methods of inservice training used in Utah (that this writer is aware of) were listed, and the teachers were asked to evaluate each method on a four point scale:

A = excellent (4.00)

B = good (3.00)

C = fair (2.00)

D = poor (1.00)

The methods listed and the ratings received are listed below:

Table I

Inservice Technique	Mean Effectiveness Rating
1. Experience back in the field of work (industry, business, etc.)	3.77
2. Consultants from other areas	3.41
3. Summer workshop, state level	3.25
4. State Specialists' visits	3.12
5. Professional Association Meetings, Publications	3.04
6. Extension courses from colleges	3.03
7. Teacher-trainer's visits	3.01
8. Summer workshop-district level	2.98
9. Preservice training	2.89
10. District vocational director's visits	2.74
11. Workshop during school year (district level)	2.67
12. Conferences-single school	2.58
13. Educational television	2.44

There were not enough teachers who had participated in inservice training using micro teaching (mini-course) to obtain a valid evaluation.

Corresponding comments were received from the respondent teachers in several areas. These comments are significant where similar, in that no specific responses were sought.

Listed below are the three most oft-repeated comments received and the approximate percentage of teachers commenting:

1.	Not enough inservice training programs are available	23%
2.	Teachers were not aware of any inservice training program in existence	18%
3.	Present programs are outdated	10%

Other comments received are listed below:

1. Inservice training programs should be made more convenient for the teachers.
2. There is no program available to teachers in outlying areas of the state.
3. Tuition is too high to make participation worthwhile.
4. The summer workshops are excellent.
5. There are no district programs available.
6. Specific courses are needed to increase efficiency.
7. Courses which are needed are not taught.
8. Teacher trainers do not visit all areas.
9. State specialists should visit more frequently.
10. The same courses are given year after year.

IV. CONCLUSIONS

The conclusions reached as a result of an analysis of the data gathered in this study are summarized below:

1. The present inservice training program for the vocational teachers in the Utah public schools needs coordination to avoid the "hit-and-miss" methods now used. This conclusion is reached after an analysis of the questionnaire, research done by other states, and available literature.

2. Coordination of the entire program could be facilitated by a systematic scheduling procedure. (See Appendix A). This would enable the administrators of the program to ascertain the teacher needs in terms of courses desired, courses required for higher degrees, scheduling conflicts, etc. Effective scheduling would also eliminate the "hit-and-miss" methods and provide long range planning. Travel distance to attend courses is a concern of the teachers, and this problem would possibly be lessened.

   Coordination is needed between the state administration and the individual school districts to avoid duplication of programs and meet teacher needs. This could be accomplished by scheduling coordination. This conclusion is reached as a result of interviews with state specialists.

3. More inservice activities are needed.

4. The present inservice training program needs more emphasis on "doing" rather than "telling".

5. Financial assistance should be offered to the teachers to encourage participation.

6. Experience back in the field of work is a particularly effective method of inservice training and should be encouraged and implemented.

7. Micro-teaching would seem to be an effective method of inservice training and should be seriously considered in the future.

APPENDIX A

Delaware Occupational Research Coordinating Unit

Scheduling Card for Voc-Tech Teachers Training Shortens Training Period

This scheduling card, sample attached, was devised in 1963 by the writer, Fred C. Finsterbach, while he was Director of the New York State Regional Industrial Teacher Training Center in New York City.

The Situation

The Center maintained, after regular school hours, a training service for Vocational-Technical teachers from the five boroughs of New York City, Suffolk County on Long Island, and Westchester-Rockland Counties upstate. Registration at that time, counting about 200 private trade school teachers accommodated on Saturdays, ran to a total of 1,000.

Because these teachers-in-service were regularly employed and had their own professional and private obligations (often including the necessity to "moonlight" a second job), scheduling and maintaining a training program of thirty-two semester hours was a monumental task.

This task was further compounded by the many variables in a service designed to accommodate trade "shop" teachers, technical lab teachers, related subjects teachers, co-op coordinators, and teachers of practical nursing. Each of these was at various stages in their studies and some had special needs for only a limited number of credits. Moreover, and important to the students, the long travel distances and urban traffic congestion did not help the situation. Insofar as possible, classes were offered at two other extension locations, one on Long Island and one in Westchester County, to lessen the disadvantages of travel. All of this called for a more flexible plan for scheduling. With the large numbers of students and their many variables, a "computer" approach became essential.

Lacking resources for this kind of sophisticated service, the "poor man's computer", the McBee Keysort or edge punch card, was utilized. With the cooperation of a specialist from McBee, the subject card was made up and proved to be a phenomenal success, not only in easing an otherwise ulcerous condition of scheduling, but in actually shortening the total span of time necessary for teacher training.

Makeup and operation of the card ;

1.0 The key-sort card employs a needle and a "V" punch as control tools. The McBee people have devised a code for alphabetizing names. So, in the "name" section (upper right edge of card), it is possible to code any number of cards and to put them in exact alphabetical order with no more than 16 passes of the sorting needle.

1.1 The right edge of the card was used for coding the "availability of students", ascertained by a prescheduling "availability slip" mailed in by the students. For example, numbers one to five on the right edge of the card indicated availability for classes from 4:30 to 6:30, Monday through Friday. Six was reserved for Saturday. Numbers 7 through 11 were used to indicate availability on any of these days or times, the hole at the number was punched into a "V" by a hand punch.

1.2 Similarly, the categorical entries along the left top edge of the cards were punched out for each student. Naturally, the punching had to be done accurately. The "M, BK, BX,Q, St. I, and Out-of City' indicated the residence location of the student.

1.3 If the student was in a car pool with others, he so indicated this fact on his "availability slip" and named his companion(s). The cards for the companion(s) in the car pool were "pulled" and specially scheduled so they all could travel together. This, incidentally, was a much appreciated, humane, and necessary accommodation for adult students.

1.4 Next, the courses that were in the curriculum for the particular type of teacher were indicated by encircling the course numbers on the lower edge of the card.

Courses already completed (or credited-by-transfer) were "V" punched out of the card.

This left "courses to be taken" and the cards were then ready for scheduling.

1.5 Scheduling Planning -

The schedule was planned by extension of the following example:

The total number of cards was sorted by running the needle through the category "trade". All the "trade" teachers dropped from the needle. These were then "needled" to find out how many required psychology.

This number was temporarily recorded as a "need", if it reached or exceeded 25, the number in a class.

It was then necessary to ascertain how many of those who "needed" the course were available on a given day and time. The "need psychology" cards were then sorted by means of the right hand slots, and the number recorded by day and hour. Usually, a one day and one set of class hours consensus was revealed and this time was tentatively set aside for "psychology".

The same procedure was used to determine the "need" and "best time" for each other subject. When all the "facts" were in, the schedule was "set". The next step was to make instructor assignments.

2.0 Instructor scheduling -

In the New York Center area we were fortunate in having a large number of capable instructors available for part-time teaching. These were utilized, together with a permanent staff of three professors. Naturally, these part-time instructors had availability preferences. So, we kept a separate card system for them and matched their specialities and time availability to those of the classes.

Our own staff of three professors, though they, too, had their own specialities, were versatile enough to be utilized in several positions. We tried however, to include <u>their</u> preferences, <u>their</u> special abilities, and <u>their</u> place of residence in the total situation.

2.1 Room assignment -

The last factor in scheduling was the assignment of rooms. We had available (on a rental basis from New York University) five classrooms and one audiovisual laboratory. This gave us a total of 12 classrooms per day for scheduling. The classes that were housed in donated quarters on Long Island and sometimes upstate relieved whatever congestion we might have had.

3.0 Summary -

Altogether the card was successful in many ways:

3.01 It double-checked the accuracy of our permanent records.

3.02 It improved the accuracy of our clerical personnel.

3.03 It shortened the task of scheduling by a factor of 4.

3.04 It enabled the scheduling of full-size classes with little or no overcrowding; (sometimes a "senior", in order to "graduate," was accommodated as an overload in a given class.)

3.05 It shortened the total training span for some students from a four-to-six year span to one of 2.5 to 3.5 years.

3.06 Conflicts in schedules were avoided and/or easily adjusted.

3.07 More students were able to be accommodated at times agreeable to them or in line with their personal obligations. (In the New York area, religious requirements were an added variable that had to be considered in the total program.)

3.08 Student morale was materially improved. Possibly, for the first time in their experience, an arbitrary method of scheduling gave way to one of "accommodation".

3.09 Cards from previous terms could be superimposed on new cards, thus improving the recording accuracy.

3.10 The student had a per-term and continuous record of courses he still needed, if he retained his copy of the card.

4.0 Cost factors and references -

4.01 The cards cost about ten cents each, printed as per sample with carbons attached.

4.02 The address of the Royal-McBee Corporation (they have offices in principal cities) is:

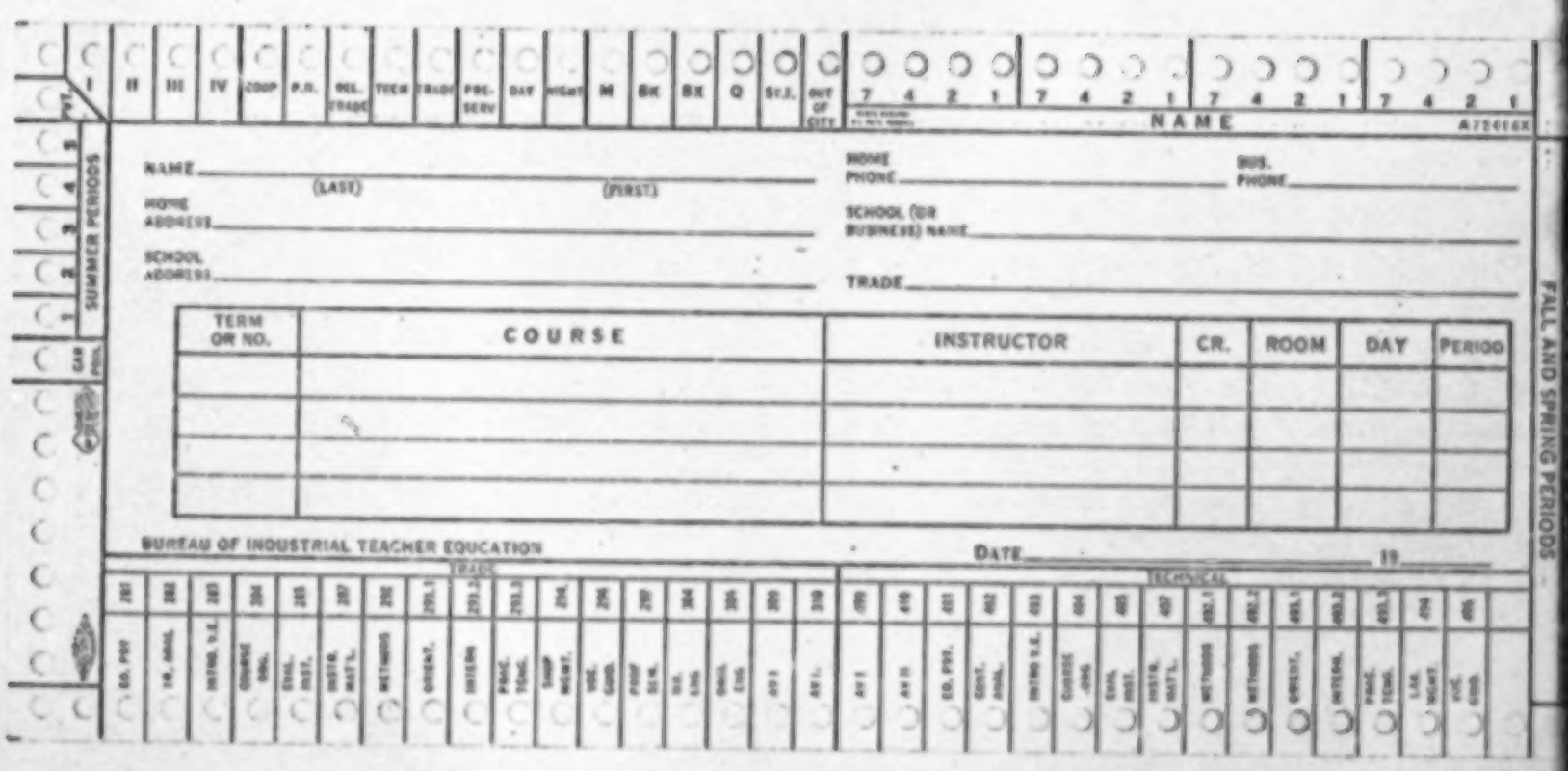
235 East 42nd Street
New York 17, New York

Mr. Edwin Carlson, District Manager

The Royal-McBee Corporation is a part of the Litton Industries.

An explanatory booklet describing the system is available free. Ask for form KSP-63-172 S-605-R63

Contributed as a service to Vocational-Technical teacher training by Dr. Fred C. Finsterbach, now Education and Training Consultant, Delaware Occupational Research Coordinating Unit, Dover, Delaware.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HOME ADDRESS
SCHOOL ADDRESS
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TRADE
TERM OR NO.
COURSE
INSTRUCTOR
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PERIOD
BUREAU OF INDUSTRIAL TEACHER EDUCATION
DATE
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TRADE
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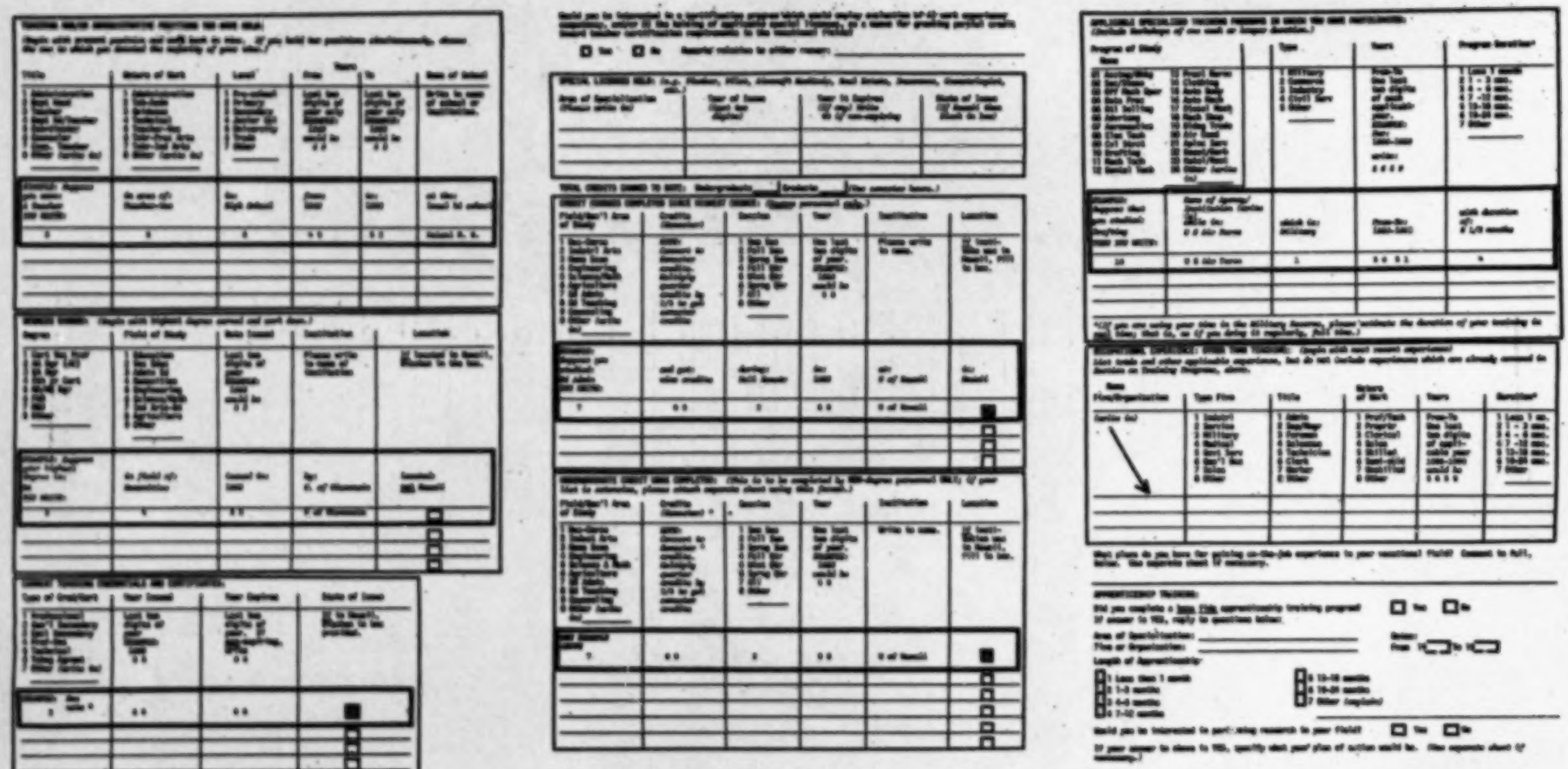
Appendix A



[illegible]

a. [illegible]
(Mark one or more)

- 1-2 years applicable work experience
- 3-4 years applicable work experience
- 5 years applicable work experience
- 6th degree
- 4 year degree
- Master's degree
- Other _____ (specify)

b. [illegible]
(Mark one or more)

- 1-2 years applicable work experience
- 3-4 years applicable work experience
- 5 years work experience plus 30 credits (24 in Ed 1 Ed and 6 Ed Admin Hrs)
- 6th degree
- 4 year degree
- Master's degree
- Other _____ (specify)

c. [illegible]
(Mark one or more)

- 1-2 years applicable work experience
- 3-4 years applicable work experience
- 6th degree
- 4 year degree
- 4 year degree plus 30 credits (18 in major and 12 in education courses)

[illegible]
(To be completed by respondent)

[illegible] of courses already listed in previous section of this questionnaire. Indicate in the space provided. Please check off the courses you have completed by marking the [illegible] of semester hours credit you were given for the course in the box to the left of course listing.

[illegible]: Regardless you are a [illegible] credits in:

- 1 Occupational Analysis
- 2 Techniques of Vocational Instr.
- 3 Organ & Admin of Instr.
- 4 Audio-Visual Education
- 5 Const. of Vocational Curricula
- 6 Occupational Counseling & Guidance
- 7 Vocational Guidance
- 8 Apprenticeship Education
- 9 Conference Leading
- 10 Supervision of Trade & Industrial Education
- 11 Voc Ed—History & Philosophy
- 12 Safety Ed for Voc Teaching
- 13 Occupations
- 14 Spec Problems in Vocational Education
- 15 Other _____ (specify title)
- 16 Other _____ (specify title)

[illegible]: _____

[illegible]
(To be completed by respondent)

[illegible] (If you are particularly interested in the present of one of these courses, indicate [illegible] in addition to [illegible] in your consideration.

[illegible]: Regardless you both plan (Checked in item [illegible]) and are especially interested that pursuing this course of study.

- Credits for Trade Experience (which respect for each of trade major for earning credit.)
- 60 degree or 60 semester hours (90 qtr) of approved courses.
- 60 degree, 5-year program of course work leading to a degree.
- 60 degree (undertake graduate work leading to Masters)
- [illegible] certification requirements (complete courses to meet certification requirements)
- Occupational Trade Courses as needed to improve technical competency.
- Industrial Leave Institutes for teers to complete higher academic attainments. (specify) _____
- Other (Internet, leave without pay, overseas assignments, reimbursement, etc.) specify: _____

[illegible]

[illegible] (Indicate your preference for course hours)

- Graduate
- Undergraduate
- Either graduate or undergraduate

[illegible]

Have you taken a course during past two years?

- Yes
- No

If answer is Yes, specify type:

- Industrial
- Educational
- Apprenticeship
- Special: _____ (please specify)

Year Course Began: 19__

Do you plan to request a leave within the next two years?

- Yes
- No

If answer is Yes, specify type:

- Industrial
- Educational
- Apprenticeship
- Special _____ (specify)

Do you feel that there will be an increased demand for personnel in your field in the future?

- Yes
- No

If answer is Yes, indicate percent of increase:

By 1970
- 10%
- 20%
- 30%
- Other _____

By 1980
- 10%
- 20%
- 30%
- Other _____

[illegible]

- 1 Business Education
- 2 Trade & Industry
- 3 Student Personnel Services
- 4 Adult-Enrichment-Public
- 5 Academic Subjects
- 6 Administration
- 7 Nursing, Dental
- 8 Cosmetology
- 9 Agriculture
- 10 Home Economics

[illegible] for your comments and suggestions. Please feel free to put down comments that come to mind or get protocol through this questionnaire. Comments on the questionnaire itself would be appreciated.

[illegible]

NAME _____
LAST FIRST MIDDLE

AGE __ __ SEX
- Male
- Female

PRESENT SCHOOL/INSTITUTION _____ PRESENT APPOINTMENT
- Full Time
- Part Time

PRESENT TITLE OR POSITION _____

Date of appointment to your present position (Use numbers to denote)

- Month
- Year

[illegible]

- I
- II
- III
- IV
- V

[illegible]
(If assigned to several areas, indicate two or more.)

- 1 Business Education
- 2 Trade & Industry
- 3 Student Personnel Services
- 4 Adult-Enrichment-Public
- 5 Academic Subjects
- 6 Administration
- 7 Nursing, Dental
- 8 Cosmetology
- 9 Agriculture
- 10 Home Economics

APPENDIX C

TEACHER EDUCATION PROGRAM
of the
FAR WEST LABORATORY FOR EDUCATIONAL RESEARCH AND DEVELOPMENT
BRIEFING

(Objective)

The primary objective of this program is to bring about desired levels of teacher behavior in specific teaching skills through the development and implementation of self contained inservice training courses. A course will consist of a set of tested and validated procedures and materials that provide experience in a specific skill.

(Rationale)

Our first inservice training course is designed to lead to more effective use of questions by classroom teachers. A recent study found that over 75% of the questions that a sample of elementary teachers directed to their pupils called for memory of specific information and only about 7% required the pupil to use higher thinking processes such as analysis, evaluation or generalization. Since many of the skills involved in teaching, such as the principles of effective questioning, have been known for years, you may wonder how we expect to succeed in this effort when previous teacher training programs have usually failed.

We believe that many of our efforts at teacher training, both preservice and inservice, have been ineffective because they have at least one of the following weaknesses; (slide 1).

1. First, they emphasize telling rather than doing. Instruction is largely divorced from actual behavior in the classroom. Attempts to structure behavior by telling the student how to behave are generally not effective for developing complex skills of the sort involved in teaching. Research from education as well as military and industrial settings indicates that interactive skills are more effectively learned through guided experience in the behavior itself.

2. (Are general rather than specific)

Much teacher training deals in generalities than systematic development of specific skills. The teacher usually cannot translate these generalities into approaches that can be used in the classroom.

3. (Lack effective models)

One useful aid to learning specific skills is to study a model. However, even in programs in which the trainee has a model available (such as the supervising teacher in a practice teaching situation), the student teacher is rarely told what to look for and is often working with a model who is weak in essential skills.

4. (Provide no effective feedback)

In the practice of a skill , the learner can progress much more rapidly if he receives information on his performance. This feedback is usually more effective if it is specific, and is provided immediately after the behavior occurs, and is still more effective if the learner can immediately apply what he has learned by additional practice.

Evaluations and surveys of inservice training programs have revealed this aspect of teacher education to be especially weak. Yet, because of the rapid changes now taking place in education, the teacher's long term effectiveness depends more and more upon inservice rather than preservice education.

(The Micro-teaching Approach)

We propose to build our inservice training courses around the micro-teaching approach because this technique provides an instructional sequence in which all of the aforementioned weaknesses can be effectively overcome.

Since some of you may not be familiar with this approach, let me describe it. As developed at Stanford University and used in their teacher intern program, micro-teaching has the following basic characteristics:

1. First a specific skill is studied by the intern (slide 2).

2. Then the intern uses the skill in a short lesson with 4 or 5 pupils (slide 3).

3. This lesson is videotaped and, immediately after its completion, the intern watches a replay of the lesson (slide 4).

4. During the replay a supervisor gives the intern feedback on his performance.

5. The intern then replans the lesson and reteaches it to another group of 5 pupils (slide 5).

Stanford has collected preliminary research evidence on this technique over the past three years and their results to date have been promising. Although research evidence on micro-teaching is far from conclusive at this time, most studies to date have shown that the technique brings about significant changes in the behavior of the interns. We are in close communication with leaders in the Stanford micro-teaching project and have been working cooperatively with the Stanford Research and Development Center in parts of our program (slide 6). Professors Dwight Allen and Fred Macdonald shown on this slide are among the leaders at Stanford in this effort.

Our plans call for adapting the Stanford approach so that it better fits the different situation found in inservice training. The self-contained inservice courses we develop will be called "Mini-courses".

I mentioned that our first Mini-course deals with the basic skills involved in questioning. We also plan to develop courses on other basic teaching skills such as reinforcement, classroom management and pupil-teacher interaction. However, we plan to deal not only with basic teaching skills which have been emphasized at Stanford, but with other skills urgently needed by the teacher who is in service (slide 7). Thus, in addition to basic skills, we will provide training in 3 other areas:

1. One set of Mini-courses will be concerned with skills needed to teach non-typical pupil groups. Our first effort here will be directed to teaching urban low-income elementary pupils (slide 8). Other courses will be concerned with skills and behaviors needed to teach Indian children and Mexican-American children. The work currently being done by Dr. Forbes in the laboratory's Communication Program will contribute directly to these courses.

2. Another group of Mini-courses will cover skills needed to teach in new educational settings. One of our first efforts in this area will be directed to the skills needed to work effectively in an individualized instructional program. We are working with the American Institutes for Research to build inservice courses for the individualized program they are currently developing. Other courses in this area might deal with skills required to teach in a team teaching situation (slide 9), in a computer-assisted instructional program, or a nongraded elementary program. Many such innovations call for drastic changes in the teacher's role. Teachers need help in making such transitions. If successful, our courses in this area will provide training that will give the teacher the help she needs.

3. Finally, we plan to provide inservice training in the skills needed to teach new and different curricula. Many of the curriculum efforts require skills and information that are new to most teachers in the schools. Here are the materials the teacher uses in one new elementary physics program (slides 10-11): If our first effort in this area proves valuable in bringing about adoption and effective use of a new curriculum, we will select several of the new curriculum approaches for which special teacher training is most needed and develop inservice Mini-courses for each of them.

(<u>Advantages of Micro-teaching</u>)

We feel that the micro-teaching approach that forms the basis of our Mini-courses has some important advantages for inservice training (slide12)

Among these are the following:

1. Through micro-teaching we can provide a complete package. This is especially important for small, rural schools where few resources are available that could be used to supplement the package.

2. The teacher can try out new methods and ideas in a less difficult situation than that found in the regular classroom.

3. Finally, you will note that the four weaknesses found in most teacher training programs can all be overcome with the micro-teaching approach:
   a) First, it focuses on specific skills;
   b) The teacher gets immediate feedback from the videotape replay of her teaching;
   c) The teacher gets immediate reinforcement from revising and reteaching the lesson; and
   d) Learning is based on direct experience. Our courses will show the teacher what to do and provide a chance to do it rather than telling the teacher what to do.

(INSERVICE EDUCATION PACKAGE ON QUESTIONING (slide 13)

To conclude, I would like to summarize the sequence of activities for our first inservice Mini-course on questioning. I believe this summary will give you a clear picture of what we plan to develop. When operational this package will take one hour of the teacher's time for 10 days. Two additional days will be required, however, during the field testing period.

(First Day) On the first day an Introduction tape will be shown. It will describe the micro-teaching approach and its advantages, discuss the purpose of the course, give the teacher directions for preparing a 20 minute pre-instruction lesson in which she will demonstrate her use of questions in a class discussion, and finally tell her how to operate the equipment.

(Second Day) On the second day the Pre-instruction lesson will be videotaped in the teacher's own classroom. This lesson will be analyzed later to appraise the level of the teacher's skill before receiving the inservice training.

(Third Day) On the third day the teacher will view the first instructional tape which is primarily concerned with probing as a means of improving pupil responses. Each technique presented will be illustrated with scenes obtained from classroom discussion sessions. After viewing the instructional tape, the teacher will be asked to prepare a 10 minute lesson built around a question sequence in

language arts, in which she should make a special effort to apply the probing Techniques covered in the tape. She will also be given a printed summary of the instructional material for study.

(Fourth Day) On the fourth day, the first Micro-teaching Session will be held.

1. The teacher will conduct the planned lesson with 10 of her pupils. This presentation will be videotaped.
2. Pupils will then return to the regular classroom, and the teacher will play back the videotape and study her own behavior. During the first playback the teacher will be instructed to study her overall performance and identify specific aspects of the lesson that could be improved. Since viewing oneself on video tape often brings about an emotional reaction, the teacher will not be asked to focus closely upon specific skills during this viewing.
3. After this first replay of the teacher's lesson, she will view the model tape. The model tape shows another teacher conducting a similar lesson and the trainee's attention is focused on major points by narrator comments as these points are illustrated by the model teacher.
4. The teacher will then replay her own lesson for the second time, this time using a checklist in order to evaluate her performance on the specific behaviors covered on the instructional tape.
5. The teacher will then be instructed to replan her lesson and be prepared to reteach it during the next session.

(Fifth Day) (Reteach of the First Lesson)

1. On the fifth day the teacher will reteach the lesson with 10 different pupils from her class. The lesson will be videotaped.
2. The teacher will then watch the playback of the lesson and evaluate her own performance. After school on the fifth day the teacher, along with another teacher taking the course will view the replays of the lessons they taught that day for the second time for the purpose of giving each other further feedback and suggestions on improving their performance. Although the teacher will be encouraged to view the second replay of her revised lesson with another teacher to see her replay, she has the option of viewing this replay alone. You will note that days 3, 4, and 5 make up a complete sequence of instruction, micro-teaching, and reteaching. Our first course is made up of three such sequences, each devoted to different skills related to effective questioning. The number of sequences to be included in a course is determined by the number of skills that the course teaches.

APPENDIX C

(Twelfth Day) On the twelfth day a videotape will be made of a lesson showing the teacher's post-instructional performance in her regular classroom. Teachers will be asked to attend a short meeting after school in order to give their comments, evaluations and suggestions regarding the course.

The teacher comments plus an analysis of behavioral changes on the pre-instructional and post-instructional tapes will provide the main basis for evaluating the Mini-course. These tapes will permit a detailed appraisal of both teacher behavior and pupil behavior as well as sampling the teacher's perceptions of the course. It will be possible to evaluate these tapes with respect to the major interaction patterns found in the classroom, changes in pupil behavior as well as to the teacher's use of the specific skills taught in the course. We also expect to find incidental learning.

After six months, a second post-instructional tape will be obtained to determine the teacher's retention of the skill learned. Once the course has been proven, the pre- and post-instructional tapes will be omitted and the course will be made available to schools, Title III Centers, and colleges for operational use.

As we develop additional courses, we plan an extensive program of development and applied research which should provide us with the knowledge we need to make our Mini-courses increasingly effective. We are hopeful that this program will make a significant contribution to improving teacher skills through inservice education. Because we are building on foundations already laid at Stanford, and are profiting from a continued cooperative effort with the staff at the Stanford Research and Development Center, we believe the program has a good chance of contributing to an effective solution to the problem of developing more competent teachers and keeping them up to date and able to function effectively in new and different situations. It is doubtful if there is any problem in education that is more urgently in need of a solution.

APPENDIX D

Bulletin of the Research Coordinating Unit
Rhode Island College
105 East Mann Hall
Providence, R. I. 02908

"Trades and Industries"

Dr. Milton E. Larson, Professor of Vocational Education completed a Study of Institute Interest of Trade and Industrial Teachers of Colorado. The broad objective of this study was to secure from vocational educators in the field of technical, trade, and industrial education information as to the needs, desires, and willingness of industrial educators to participate in institutes, workshops, and/or seminars of an updating nature.

Specifically, answers to questions such as the following were sought:

1. What kinds of updating activities should be planned, if any?
2. What subjects should be given the highest priorities?
3. If such activities should be planned, when should they be scheduled?
4. Should sessions on teaching methods, techniques and other pedagogical subjects be included?

Summary of Findings

1. Interest in attending updating institutes was expressed by 216 respondents (93%)
2. Seventy-six percent (173 respondents) indicated that arrangements could be made with school administration to attend.
3. Technological subject-matter topics including "hardware" applications plus sessions on pedagogy was most desirable for 110 respondents (50%): 38 percent chose technological subject matter topics plus "hardware" without sessions on pedagogy.
4. Tune-up and carburetion received the most attention in auto mechanics (39 respondents, 20%); other interests were: trouble shooting (15%) electrical systems (14%); automatic transmission (14%).
5. In the field of building construction and civil technology, 32 (26%) were interested in materials and finishes: 30 (24%) in prefabrication; and 22 (18%) in management.
6. Computerized drafting was the principle choice (21%) of the respondents in the field of drafting and design.
7. Computers were selected by 19 percent in the electronics field; solid state circuits were second (18%); and instrumentation and transistors each received 15 percent of the respondent's votes.
8. "Hardware" applications, programmed learning, and business data processing developments, in descending order, were suggested by the respondents from the field of electronic data processing.

9. In the field of electricity, the responses showed a 26 percent interest in instrumentation developments with 24 percent checking greatest interest in trends in communications.
10. In metal processing and mechanical technology, numerical control received 27 percent, while 23 percent selected new materials.
11. In the fields of plumbing, pipefitting, heating, air conditioning and refrigeration the greatest interest was in new materials and methods.
12. Inert arc (22%) and heliarch (19%) were the subjects of most interest to the instructors in welding and fields.
13. New materials and processes was the choice of 34 percent in sheet metal; 29 percent said cold forming.
14. In the health field the greatest interest was in recent innovations (29%) while 22 percent were concerned about legal implications.
15. Under the heading technologies of education the greatest interest was shown in externships and cooperative-type vocational education. The second greatest interest was in counseling techniques with placement and follow-up listed as third by the respondents to this item.

Conclusions and Implications

Half of the respondents desired a combination of technological subjects including hardware applications coupled with topics of pedagogy. This points to a realization of the need for more opportunities for growth in teaching methods as well as essentials updating in new industrial innovations.

The findings of this study provides food for thought and a basis for action to meet the needs of teachers in technical and vocational education.

The important implication of this study is that the instructors at the grass roots are requesting an opportunity for up-grading.

Larson, Milton E. Institute Interest of Technical Trade and Industrial teachers of Colorado. Research Report. Colorado State University, Fort Collins, Colorado, 1967.

APPENDIX E

QUESTIONNAIRE

1. What subject(s) do you teach?_____

2. How long has it been since you have received an inservice training course in instructional methods?_____

3. Is there opportunity for you to make suggestions for program improvement?

   Please comment:_____ yes ☐

   _____ no ☐

   _____

4. Should the present inservice training programs emphasize more doing and less telling?

   Please comment:_____ yes ☐

   _____ no ☐

   _____

5. Would you participate more frequently than you do now in recertification courses and advanced-degree programs if those courses were taught tuition-free or for reduced tuition?

   Please comment:_____ yes ☐

   _____ no ☐

   _____

6. Are you faced with scheduling problems for inservice training? Please check appropriate boxes which indicate problem areas.

   / / 1. Time of day
   / / 2. Time of year -- season
   / / 3. Length of course -- too long
   / / 4. New courses are needed
   / / 5. Courses are not of high quality
   / / 6. Classes are overcrowded
   / / 7. Travel distance is too far
   / / 8. More long-range planning is needed
   / / 9. Other -- Please comment: _____

   _____

7. What is your overall view of the present in-service training program as it applies to you? Does it meet your specific needs? Do you have suggestions for improvement? Please comment:_____

_____

8. Listed below in column one are methods of inservice training. In column two check each method of inservice training which you have participated in. In column three rate each method:

A = excellent
B = good
C = fair
D = poor

METHOD	YOU HAVE PARTICIPATED	RATE EACH METHOD USED
1. Summer Workshops, state level		
2. Summer Workshops, district level		
3. State Specialists' visits		
4. Workshop during school year, district		
5. Conferences, single school		
6. Professional Association meetings, publications		
7. Teacher trainer visits		
8. Educational Television		
9. Extension courses from college		
10. Consultants from other areas		

APPENDIX E

METHOD	YOU HAVE PARTICIPATED	RATE EACH METHOD USED
11. Mini courses		
12. Pre-service training for new teachers		
13. Experience back in the field of work (industry, business, etc.)		
14. District Vocational Director's visits		
15. Other (please list)		

TABULATION OF QUESTIONNAIRE RESULTS

	Distributive Education	Vocational Agriculture	Home Economics	Trade and Industrial	Office	District Director	Cumulative Total
QUESTION 2: How long has it been since you have received an inservice training course in instructional methods?							
A. Less than 6 months	65%	56%	29%	34%	39%	28%	44%
B. 6 months to one year	25%	11%	8%	7%	6%	17%	11%
C. One year to two years	5%	11%	25%	3%	16%	17%	12%
D. Two years or over	5%	19%	29%	34%	29%	33%	24%
E.. Never received	0%	4%	8%	21%	10%	6%	9%
QUESTION 3: Is there opportunity for you to make suggestions for program improvement?							
yes	96%	96%	75%	61%	56%	94%	79%
no	4%	4%	25%	29%	44%	6%	21%
QUESTION 4: Should the present inservice training emphasize more "doing" and less telling?							
yes	80%	88%	74%	76%	64%	100%	76%
no	20%	12%	26%	24%	36%	0%	24%
QUESTION 5: Would you participate more frequently than you do now in recertification courses and advanced-degree programs if those courses were taught tuition-free or for reduced tuition?							
yes	68%	92%	92%	100%	87%	65%	89%
no	32%	8%	8%	0%	13%	35%	11%

QUESTION 6: Are you faced with scheduling problems for inservice training? Please check appropriate boxes which indicate problem areas. 1. Time of day; 2. Time of year -- season; 3. Length of course -- too long; 4. New courses are needed; 5. Courses are not of high quality; 6. Classes are overcrowded; 7. Travel distance is too far; 8. More long-range planning is needed; 9. Other

	Distributive Education	Vocational Agriculture	Home Economics	Trade and Industrial	Office	District Director	Cumulative* Total
1.	9%	2%	0%	10%	5%	14%	6%
2.	6%	12%	18%	13%	24%	11%	16%
3.	6%	2%	20%	2%	7%	0%	6%
4.	19%	30%	17%	21%	16%	24%	20%
5.	3%	5%	0%	13%	7%	5%	7%
6.	3%	2%	0%	2%	0%	0%	1%
7.	29%	23%	25%	26%	26%	8%	26%
8.	9%	12%	20%	8%	12%	14%	11%
9.	18%	12%	0%	5%	3%	24%	7%

QUESTION 7: What is your overall view of the present in-service training program as it applies to you? Does it meet your specific needs? Do you have suggestions for improvement?

		Composite total
A.	Meets needs adequately	20%
B.	Does not meet needs adequately	20%
C.	Program is too broad	20%
D.	Not enough programs are available	30%
E.	Not enough time to participate	10%

* District Directors not included

QUESTION 8: Listed below in column one are methods of inservice training. In column two check each method of inservice training which you have participated in. In column three rate each method: A = excellent
B = good
C = fair
D = poor

METHOD: 1. Summer workshops, state level; 2. Summer workshops, district level; 3. State specialists' visits; 4. Workshop during school year, district; 5. Conferences, single school; 6. Professional association meetings, publications; 7. Teacher trainer visits; 8. Educational television; 9. Extension courses from college; 10. Consultants from other areas; 11. Mini courses; 12. Pre-service training for new teachers; 13. Experience back in the field of work (industry, business, etc); 14. District Vocational Director's visits; 15. Other

	Composite Rating	Distributive Education	Vocational Agriculture	Home Economics	Trade and Industrial	Office	District Director
1.	3.25	3.18	3.36	3.63	3.0	3.16	2.94
2.	2.98	3.20	2.75	3.60	2.86	3.00	3.38
3.	3.12	3.12	3.32	3.09	3.25	2.81	3.16
4.	2.67	3.17	2.40	2.80	2.42	2.78	3.00
5.	2.58	3.17	2.40	2.64	2.27	3.00	2.57
6.	3.04	3.00	2.59	3.53	2.77	3.19	2.94
7.	3.01	2.44	2.69	3.40	2.89	3.42	2.88
8.	2.44	2.27	2.33	2.33	2.27	2.91	2.67
9.	3.03	3.29	3.06	3.08	3.00	2.83	3.30
10.	3.41	2.80	3.43	4.00	3.17	3.63	3.50
11.	2.89	2.44	2.75	2.80	3.33	3.50	2.43
12.	3.77	3.86	3.57	4.00	3.82	3.67	3.22
13.	2.74	3.27	2.57	3.00	2.94	2.11	

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DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION

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ABSTRACT

800 Inservice training is an integral part of an educational system. This report
801 concerns inservice training for vocational and technical teachers in Utah.
802 Specific Objectives of the study were:
803 1. To determine the extent of the inservice training program in Utah.
804 2. To compare the inservice training program in Utah with that of other states.
805 3. To determine the effectiveness of the inservice training program in Utah.
806 4. To ascertain problem areas and make recommendations for improvement.
807 The study was conducted as follows:
808 1. A survey of other state programs was made to provide baseline data for an
809 assessment of Utah's program.
810 2. Personal interviews were held with state vocational specialists to determine
811 the extent of the inservice training program in Utah and to ascertain probl
812 areas.
813 3. Questionnaires were sent to vocational teachers throughout the state of Utah
814 to gather statistical data concerning the inservice training program.
815 Library materials were used to gain a depth of understanding.
816 Conclusions reached by the study included the following:
817 1. A systematic method of scheduling is needed to coordinate the entire inservi
818 training program.
819 2. The present program should place more emphasis on doing rather than telling.
820 3. Financial assistance should be offered to the teachers to encourage particip
821 4. Experience back in the field of work should be encouraged.
822 5. Modern techniques should be incorporated in the inservice training program.